

ARCHAEOLOGICAL EXCAVATIONS AT YIWARLARLAY 1: SITE REPORT

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Yiwarrlarlay 1, the Lightning Brothers site, was excavated by the authors in 1989. The site contained evidence of human occupation dating back to the last 700 years or so, although it is not until the last 150 years, after the arrival of Europeans, that there is any *in situ* evidence for artistic activity in the shelter. In this paper we record the Lightning Brothers Dreaming story as was recorded by the authors in 1989, and present complete lists of materials excavated at the site. □ *Archaeology, Northern Territory, rock art, aboriginal site.*

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YIWARLARLAY AND WARDAMAN SOCIAL LANDSCAPE

150km SSW of Katherine lies a Dreaming place important to the Wardaman people of the Northern Territory. This is Yiwarrlarlay, the land of the Lightning Brothers. Yiwarrlarlay itself contains an impressive sandstone outcrop jutting out of flat sandy plains. Amongst the outcrop are several rockshelters, many of which were, during various episodes in the past, painted and engraved. The engravings themselves generally (but not always) appear to be older than the paintings, as the former underlie the latter, and most of them are considerably patinated. Together, the plains, sandstone outcrop, rockshelters and rock art consitute to the Wardaman people part of the Dreaming-scape of the Lightning Brothers.

It is the landscape itself which, to the Wardaman people, expresses the essence of the local Dreaming. The art is part and parcel of this landscape; it is considered *buwarraja* (Dreaming), as are the surrounding rocks, hills, etc., and the paintings and engravings are not believed to be the result of human actions (although humans may make them 'look good' by retouching) (Merlan, 1989). The paintings themselves are numerous, and have been undertaken in various styles, but the central images are two huge figures, one of which is over four metres tall, of human-like beings. These are the Lightning Brothers, Yagjagbula and Jabirringgi (Fig. 1).

In the Dreaming Yagjagbula, the younger brother, is tall and handsome, whilst Jabirringgi is short and not so attractive. Both brothers are of the Jabijin skin. Yagjagbula has a wife, Gulliridan, whilst Jabirringgi is married to Ganayanda. Every day the brothers go hunting; one day Yagjagbula hunts for food, the next it is Jabirringgi's turn. One day Jabirringgi returns from a hunting trip to hear his wife whispering with Yagjagbula in a secluded break in the rock (Fig. 2). He immediately becomes suspicious and investigates to find them copulating. He throws a spear at Yagjagbula, who evades it. A fight breaks out, with each brother taking a position on the plains at Yiwarrlarlay, whence they throw spears and boomerangs at each other (Fig. 3). In the process they produce lightning, which



FIG. 1. The Lightning brothers as they appear at Yiwarrlarlay



FIG. 2. Break in the sandstone where Yagjagbula and Ganayanda are caught

at one stage strikes the sandstone outcrop and splits the rock in two. The frogs come up from the south to watch the fight, as does the rain (*wiyan*), who was heading up to the Yingalarri waterhole, but gets distracted as it passes near Yiwalarlay (at the same time, the Rainbow Serpent, Gorondolni, flashes at the rain to warn it not to advance to Yingalarri).

Eventually Yagjagbula hits Jabirringgi across the forehead with his boomerang, knocking off his headdress and winning the fight (Fig. 4). Some Wardaman people say that Jabirringgi is decapitated across the forehead, whilst others say that only his headdress is knocked off. In the event, the headdress falls to the ground, where it is transformed into a conspicuous rock which, until it was stolen by Europeans recently, could be seen at Yiwalarlay.

ARCHAEOLOGICAL INVESTIGATIONS

Yiwalarlay contains what is perhaps the most renowned Aboriginal rock art site in Australia. The site and its related Dreaming Story has been reported by a number of authors (e.g. Harney,

1943; Arndt, 1962), and was made famous to the non-archaeological public by Eric von Daniken (1971) who said that the main painted figures on the walls of the shelter were extra-terrestrials. It was not long after that J.P. White (1974) devoted a whole chapter of his book to the Lightning Brothers in his debunking of von Daniken's rather fanciful flights of imagination.

Yet despite the archaeological and public awareness of the art at Yiwalarlay, until very recently very little was known about the antiquity and nature of occupation at the site. The first archaeological investigations there did not take place until 1989, when the authors undertook Earthwatch-funded research in the region (Fig. 5). This paper reports on the excavations undertaken at Yiwalarlay 1, being the rockshelter housing the paintings of the Lightning Brothers. Other shelters with signs of occupation occur at Yiwalarlay, and these will form the subject of a separate study (see David et al., in press, for further information on archaeological work in 1988 and 1989).

Yiwalarlay 1 was partly excavated by David, McNiven and Earthwatch volunteers in mid-1989. A series of 16 contiguous 50cm x 50cm squares were excavated below the painting of Yagjagbula (Fig. 5) (David et al., 1990b). Excavated squares were set as a four by four grid, referenced by an alpha-numeric system. Excavation of the outer 10 squares (C18, D18, E18, F18-21, E21, D21, C21) did not extend below Stratigraphic Unit (SU) 2, as these were excavated solely to protect the main excavation from contamination by in-falling loose, surface sediments. By excavating the periphery squares down to compact sediments, such contamination



FIG. 3. Place on the sandy plains where Jabirringgi stands in his fight with Yagjagbula.



FIG. 4. Jabirringi, with his head-dress knocked off.

could be minimised. The maximum depth of excavation of the periphery squares was 6.6cm.

All squares were excavated in bucket spits following the site's stratigraphy (Johnson, 1979). All stone artefacts, bones, shell, ochre, contact materials, and exfoliated wall cortex observed during the excavation were recorded in 3-D and bagged separately, whilst the rest of the cultural material was sieved in 3mm sieves and subsequently sorted. Sediment samples were taken from each spit (XU) from each square. Bedrock was reached at a maximum depth of 56cm below surface. Four well-marked stratigraphic units were identified (Fig. 6):

SU1: loose surface material with much organic material present (e.g. leaf litter, macropod faeces). Cultural materials present include charcoal, stone artefacts, European objects, ochre, ash, bone and shell. Sediment is a greyish-red ashy sand.

SU2: similar to SU1 but more compact. Includes cultural materials, and there is significantly less leaf litter and macropod faeces than in SU1. European objects present. Compact greyish-red ashy sand.

SU3: grey ash with similar range of cultural materials as SU2, although here no European objects were found. Interface between SU2 and SU3 is 1cm thick. SU3 contains three localised lenses (sub-units 3b-3d), where sediment colour

and ash content differ from generalised SU3a. At base of SU3a, a well-defined thin, compact crust of ash appears (SU3b). It is up to 3mm thick where present. SU3c and SU3d are concentrations of white-grey ash.

SU4: the change-over to SU4a is sudden. This unit is a yellowish-pink sand which gradually gives way to a white sand (SU4b). Numerous sandstone blocks appear in SU4. Some very localised termite-damaged areas were identified in situ, and these are well-defined, compact, crusty areas. They could be easily traced during the excavation, and were isolated from surrounding uncontaminated sediments (Appendix 1).

RADIOCARBON DATES

Two radiocarbon dates (David et al., 1990) will only briefly be recounted here.

Wk-1549: Modern; a charcoal date from the basal spit of SU3 in Square D19 (XU7).

R11882, NZA860: 444 ± 87 BP; a charcoal date, combining charcoal from Square D19 XU11 and XU12b, Square E19 XU10b and XU11b, and Square E20 XU 10b and XU14 (near base of SU4).

Cultural materials were excavated from all stratigraphic units (Appendix 1). Deposition

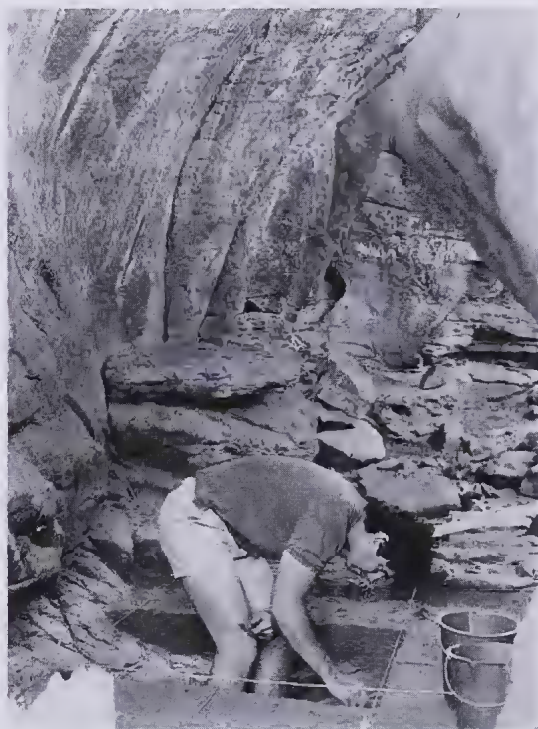


FIG. 5. Excavations at Yiwarralarlay 1.

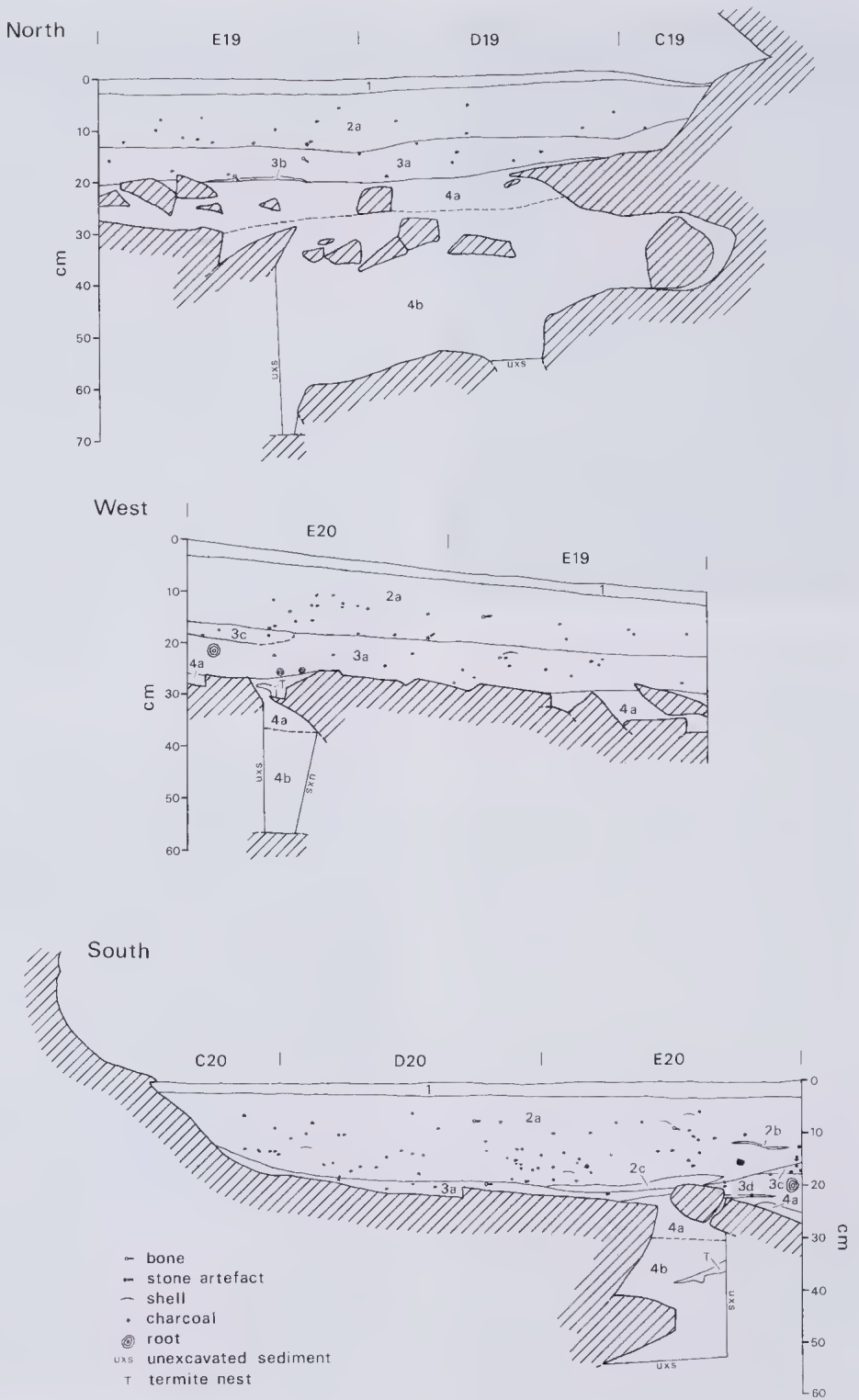


FIG 6. Yiwarrlarlay 1 section drawings.

rates of the various cultural materials changes significantly immediately after European contact (beginning of SU3), when increases in all cultural materials are noted (David et al., 1990, table 1). The post-contact period sees the first appearance of in situ ochres and of exfoliated painted wall cortex (five tiny fragments of ochre were found in spits immediately underlying SU3. These are likely to be post-depositional intrusions, as are the fine particles of charcoal in the upper spits of SU4). The ochres and the exfoliated painted wall cortex deposition rates continue to increase through the 19th century, and peak during the first half of the 20th century. Unpainted exfoliated wall cortex occurs throughout the deposits, implying that the surface of the rock wall has been unstable and exfoliating at least since humans first started camping at the site. The ochres and painted wall cortex only in post-contact levels imply that the paintings at Yiwarralarlay 1 are a post-contact phenomenon. This is especially the case with respect to the paintings of the Lightning Brothers given that the excavation pit was located immediately beneath them (David et al., 1990).

A human burial occurs in eroding sediments in a crack in the rock situated towards the southern end of the shelter. Fragments of ochred bone, similar to those of the eroding burial, were found in situ in the excavated deposits, from SU1 down to SU3 (inclusive). All such bones are very small fragments. It is likely that the burial which is currently eroding has been doing so since the beginnings of deposition of SU3, as fragments occur in the deposits since then. The burial is located in close proximity to the excavation squares, and slightly up-slope, although elsewhere the surface of the shelter floor is flat. Given the post-contact nature of SU3, the burial itself is also likely to have been deposited during post-contact times (no ochred bone fragments have been found in SU4).

CONCLUSION

Archaeologically, Yiwarralarlay 1 does not show in situ evidence of human occupation before approximately the thirteenth century A.D. Since then, low intensity occupation has prevailed until the arrival of Europeans sometime during the 19th century. In association with this event Aboriginal use of Yiwarralarlay 1 increased dramatically. This is expressed not only in a proliferation of stone artefacts, ochred bone

(burial) and food refuse, but also in the beginnings of painting at the site.

Yet underlying the paintings on the walls of the shelter are numerous peckings and abraded grooves, most of which are highly patinated and therefore likely, though not necessarily, to have considerable antiquity. It is possible that such engravings were made at a time before people camped at the site itself; in other words, before the deposition of anthropogenic materials at the site. For this reason, in part, archaeological investigations in other rockshelters at and around Yiwarralarlay could prove useful in understanding the antiquity of the rock art at Yiwarralarlay 1 and beyond. Such excavations will be published at a later date.

ACKNOWLEDGEMENTS

We would like to thank the many Wardaman people who showed us and allowed us to record and excavate some of their sites. Special thanks go to Ruby Alison, Riley Birdun, July Blatcher, Daisy Gimin, Lily Gingina, Queenie Ngabijiji, Tarpot Ngamunagami, Elsie Raymond, Oliver Raymond, Barbara Raymond, Michael Raymond, Lindsay Raymond and Tilley Raymond. The Lightning Brothers story recounted in the Introduction of this paper was told to us on-site in 1989 by Elsie Raymond, with Tarpot, Lily, and Riley also present.

We would also like to thank the 1989 Earthwatch team for helping with the excavation and sorting of Yiwarralarlay 1, and Earthwatch for financing the expedition. Thanks also to Francesca Merlan and Robin Frost for useful discussions in the field, and to Sandra Cochrane, Tracey Barrett and Nicole Hayley for helping to sort the Yiwarralarlay 1 material. Last but not least, thanks go to the Australian Institute of Aboriginal and Torres Strait Islander Studies and the Australian Heritage Commission for funding of the radiocarbon dates.

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APPENDIX

List of materials retrieved from all excavation squares. Note that glass flakes are included in the "Stone Artefacts" columns. SU=Stratigraphic Unit (Layer); XU=Excavation Unit (spit).

SQUARE C18

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	4.8	0.30	1	0.08	9.05	35.44	0.17	2	1.26	1	1.37	5
2	2	3.1	0.45			11.98	7.92	0.17					11

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=OCHRED BONE (GM); 8=OCHRED CORTEX (#); 9=OCHRED CORTEX (GM); 10=UNOCHRED CORTEX (#); 11=UNOCHRED CORTEX (GM); 12=STONE ARTEFACTS (#).

SQUARE D18

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	22.8	1.47	2	0.21	35.57	71.36	0.10	2	0.35	1	0.4	0.01	18
2	2	14.6	1.5			24.11	21.73	0.19	9	1.93				31

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=OCHRED BONE (GM); 8=OCHRED CORTEX (#); 9=OCHRED CORTEX (GM); 10=UNOCHRED CORTEX (#); 11=UNOCHRED CORTEX (GM); 12=EGG SHELL (GM); 13=STONE ARTEFACTS (#).

SQUARE F18

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	20.4	2.16	1	0.11	56.13	87.24	6.03*	0.78				0.03	38
2	2	17.0	1.18	3	0.24	33.43	30.83	0.07**	0.82	3	0.11	0.04		31

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=OCHRED CORTEX (#); 10=OCHRED CORTEX (GM); 11=EGG SHELL (GM); 12=LAND SNAIL (GM); 13=STONE ARTEFACTS (#). *=1 TIN LID + 1 FRAGMENT OF ALUMINIUM FOIL; **=1 FRAGMENT OF ALUMINIUM FOIL.

SQUARE F18

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	32.8	1.12	9	0.50	36.12	106.86	0.10*	0.36	4	0.17	0.07	21
2	2	5.6	0.30	2	0.19	9.83	24.62	0.10**	1.42				8

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=OCHRED CORTEX (#); 10=OCHRED CORTEX (GM); 11=LAND SNAIL (GM); 12=STONE ARTEFACTS (#). *=1 PIECE OF PAPER + 1 PIECE OF CLOTH; **=2 FRAGMENTS OF ALUMINIUM FOIL.

SQUARE C19

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1	8.4	0.21			8.59	38.29		0.76	4	0.13	1	0.05		6
2	2	5.3	0.22	1	0.05	12.06	15.63		0.05	1	0.04				8
3	2+3A	4.4	1.03	4	0.50	27.58	2.38	0.04	0.10	1	0.09				12
4	3A	5.2	0.20			13.52	3.32								4
5	3A	1.4	0.19	1	0.16	5.12	2.81								3
6	3A+4	0.2	0.05			1.06	0.23								1
7	4B					0.04	0.21			1?	0.042			0.23	3
8	4B					0.07	0.15							0.04	4
9	4B					0.15	11.60								4
10	4B						0.03								

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=OCHRED CORTEX (#); 10=OCHRED CORTEX (GM); 11=UNOCHRED CORTEX (#); 12=UNOCHRED CORTEX (GM); 13=TERMITE NEST (GM); 14=STONE ARTEFACTS (#).

SQUARE D19

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	12.4	0.83	6	0.16	6.80	132.23	0.05	0.81	10	0.90	5	1.31
2	2	10.3	0.72	2	0.13	20.62	36.59		0.92	1	0.05		
3	2	22.9	2.68			45.62	8.65		0.12	1	0.01		
4	2	26.5	2.95	5	0.20	59.52	8.48		0.40				
5	2+3A	28.0	4.33	3	0.12	90.98	0.04		0.40	1	0.04		
6	3A	21.9	1.90	1	0.04	47.49			2.73	2	0.05		

7	3A+3B	6.2	0.55			18.30	1.84	0.01					
8	4A	0.2	0.03	1	0.04	0.53	3.30			2	0.03		
9	4B					0.13	0.56						
10	4B	0.2		2	0.15	0.14	15.15			5	0.19		
11	4B						0.53			1	0.17		
12A	4B					0.14	5.46						
12B	4B						0.18						
13	4B						0.54						

XU	SU	13	14	15	16	17	18
1	1						18
2	2						18
3	2	2.10	0.97				12
4	2			0.01			28
5	2+3A		0.44	0.04	0.01		66
6	3A		2.00		0.01		60
7	3A+3B				0.01		12
8	4A						6
9	4B						2
10	4B					8.97	17
11	4B						8
12A	4B					5.69	4
12B	4B						8
13	4B					0.18	3

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=OCHRED PAPER-BARK (GM); 8=OCHRED BONE (GM); 9=OCHRED WALL CORTEX (#); 10=OCHRED WALL CORTEX (GM); 11=UNOCHRED WALL CORTEX (#); 12=UNOCHRED WALL CORTEX (GM); 13=PIECE OF WOOD (GM); 14=BURN'T EARTH BURN'T STONE (GM); 15=EGG SHELL (GM); 16=LAND SNAIL (GM); 17=TERMITE NEST (GM); 18=STONE ARTEFACTS (#).

SQUARE E19

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	16.0	1.68	2	0.07	107.41	0.04*		1.11	6.37	0.01	T11	
2	2	15.0	0.99			19.35			0.19	31.81			2
3	2	17.4	1.53			10.00	0.02**		0.37	26.25			
4	2	18.1	1.30	1	0.08	2.01	0.25*		0.24	42.47			1
5	3A	27.3	3.92			1.66				75.50	0.01		
6	3A	29.6	2.54	1	0.09	7.18				92.89			
7	3B	10.7	1.14			2.55				31.16		0.01	1
8	4A	0.1	0.03			1.34		2.29		0.58			
9A	4					1.06				0.53			
9B	4***					0.16				0.01			
10A	4B***	0.3				2.63				0.42			
10B	4B					0.23							
11A	4B***					3.74							?
11B	4B					0.01							
12	4B***					0.40						0.01	
13A	4B***					1.64				0.05			
13B	4B					0.09							
14	4B					0.20							

XU	SU	13	14	15	16	17
1	1	5.79	1	0.99	27	
2	2	0.61	1	0.44	16	
3	2				9	
4	2	0.04			17	
5	3A				18	
6	3A				25	
7	3B	0.27	1	0.09	37	
8	4A				9	
9A	4				5	
9B	4***				1	9.99
10A	4B***				11	26.15
10B	4B				2	
11A	4B***	?	1	0.01	1	70.72
11B	4B				1	
12	4B***		2	0.06	5	140.28
13A	4B***		1	0.02	5	41.70
13B	4B				3	0.10
14	4B				4	

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=OTHER ORGANICS (GM); 6=CONTACT OBJECTS (GM); 7=BURN'T EARTH BURN'T STONE (GM); 8=OCHRED BONE (GM); 9=CHARCOAL (GM); 10=LAND SNAIL (GM); 11=EGG SHELL (GM); 12=OCHRED CORTEX (#); 13=OCHRED CORTEX (GM); 14=UNOCHRED CORTEX (#); 15=UNOCHRED CORTEX (GM); 16=STONE ARTEFACTS (#); 17=TERMITE NEST (GM). * = 2 PIECES OF ALUMINIUM FOIL; ** = 1 PIECE OF ALUMINIUM FOIL; *** = XU DISTURBED BY TERMITES.

SQUARE F19

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	9.2	2.23	3	0.35	41.59	87.76	0.03*	2.37	3	0.15	T16	
2	2	12.2	0.41	2	0.37	28.00	32.23	0.10*	0.05	4	1.62	0.08	7

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=OCHRED WALL CORTEX (#); 10=OCHRED WALL CORTEX (GM); 11=LAND SNAIL (GM); 12=STONE ARTEFACTS (#). * = 1 FRAGMENT OF ALUMINIUM FOIL.

SQUARE C20

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1	8.4	0.31	10.27	36.51		0.22	7	0.19			0.05	1	0.04	4
2	2	9.6	1.00	8.10	21.17		0.16	5	0.09		0.01				9
3	2	11.4	0.32	16.89	6.35		0.15			0.14			1	0.02	10

4	2	22.9	2.81	36.62	4.59	35.58*	0.47					1	0.60	15
5	2+3A	5.49	0.18	9.92	1.17			1	0.06	0.03		2	0.08	7

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=CHARCOAL (GM); 4=OTHER ORGANICS (GM); 5=CONTACT OBJECTS (GM); 6=OCHRED BONE (GM); 7=OCHRED CORTEX (#); 8=OCHRED CORTEX (GM); 9=BURNT EARTH/BURNT STONE (GM); 10=EGG SHELL (GM); 11=LAND SNAIL (GM); 12=OCHRE (#); 13=OCHRE (GM); 14=STONE ARTEFACTS (#). *=CUT-THROAT RAZOR.

SQUARE D20

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1	23.3	0.50			27.79	84.67	0.05*	0.64						4
2	2	20.9	1.39			24.02	36.80	0.05**	1.94	6	0.70			6.78	9
3	2	34.3	1.48	4	0.08	41.39	16.12		0.49	2	0.28				10
4	2	57.6	3.03	2	0.16	87.36	8.05	0.05***	1.63			1	0.03		56
5	2+3A	51.4	13.32	9	0.28	98.19	11.67		6.74	2	0.03	2	0.22		38
6	2+3A	53.7	2.79	2	0.10	63.50	1.89								39
7	4A	10.5	1.21	2	0.17	23.31	0.93								47
8	4					0.15	0.35					2	7.81		
9	4					0.01	0.04	0.06****							

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=OCHRED CORTEX (#); 10=OCHRED CORTEX (GM); 11=UNOCHRED CORTEX (#); 12=UNOCHRED CORTEX (GM); 13=LARGE QUARTZ CRYSTAL (GM); 14=STONE ARTEFACTS (#). *=1 PIECE OF ALUMINIUM FOIL. + 1 MATCHSTICK; **=2 PIECES OF ALUMINIUM FOIL.; ***=1 PIECE OF ALUMINIUM FOIL. + 1 PIECE OF PLASTIC; ****=1 PIECE OF PLASTIC.

SQUARE E20

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	7	0.29	28.62	4	0.68	3	1.05	0.94	21.09			70.41
2	2	19	0.11	26.11			1	0.28	1.66	27.05	4	0.14	35.62
3	2	31	0.01	25.36			1	0.03	0.97	27.92	2	0.46	13.75
4	2	20		31.46					3.78	25.36			2.66
5	2	73	0.09	133.41			2	0.65	5.08	65.15			2.26
6	2+3	43		99.99					3.89	28.66	1	0.09	5.13
7	3A	56		37.08					3.32	23.39			6.60
8	4A			0.65						0.06			0.81
9	4B			0.29			1	0.08		0.24			0.60
10A	4B*	2											0.18
10B	4B			0.01									0.21
11	4B*	2		0.01			1	0.01					3.59
12	4B*	5					3	0.15		0.10			1.23
13	4B*	4											6.76
14	4B			0.01									0.78

1=STONE ARTEFACTS (#); 2=CONTACT OBJECTS (GM); 3=CHARCOAL (GM); 4=OCHRED CORTEX (#); 5=OCHRED CORTEX (GM); 6=UNOCHRED CORTEX (#); 7=UNOCHRED CORTEX (GM); 8=MUSSEL SHELL (GM); 9=BONE (INCLUDING OCHRED BONE) (GM); 10=OCHRE (#); 11=OCHRE (GM); 12=OTHER ORGANICS (GM). *=TERMITE DAMAGE.

SQUARE F20

XU	SU	1	2	3	4	5	6	7	8	9
1	1	12.4	0.65	1	0.92	38.71	118.19		0.97	16
2	2	6.9	1.04			11.15	32.81	0.13*	0.03	12

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=STONE ARTEFACTS (#). *=1 PIECE OF ALUMINIUM FOIL.

SQUARE C21

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	6.1	0.08	1	0.03	10.71	35.12		0.24	7	0.32		9
2	2	9.9	0.37			6.86	26.47	0.10*	0.28			0.02	9

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=OCHRED CORTEX (#); 10=OCHRED CORTEX (GM); 11=EGG SHELL (GM); 12=STONE ARTEFACTS (#). *=1 MATCHSTICK.

SQUARE D21

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	21.7	0.25	33.33	95.01		0.78	11	0.67	3	0.32	0.01	15
2	2	21.2	0.85	34.66	63.18	0.11*	1.96	5	0.17				10

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=CHARCOAL (GM); 4=OTHER ORGANICS (GM); 5=CONTACT OBJECTS (GM); 6=OCHRED BONE (GM); 7=OCHRED CORTEX (#); 8=OCHRED CORTEX (GM); 9=UNOCHRED CORTEX (#); 10=UNOCHRED CORTEX (GM); 11=LAND SNAIL (GM); 12=STONE ARTEFACTS (#). *=1 PIECE OF ALUMINIUM FOIL. + 1 MATCHSTICK.

SQUARE C21

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	19.0	0.61	5	2.70	32.29	63.40	1.50	2	3.77			22	
2	2	27.9	2.33			40.48	25.41	1.54	9	0.54	3	0.60	0.05	33

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=OCHRED BONE (GM); 8=OCHRED CORTEX (#); 9=OCHRED CORTEX (GM); 10=UNOCHRED CORTEX (#); 11=UNOCHRED CORTEX (GM); 12=LAND SNAIL (#); 13=STONE ARTEFACTS (#).

SQUARE F21

XU	SU	1	2	3	4	5	6	7	8	9	10	11	12
1	1	19.8	0.75	1	0.17	29.90	63.29	0.10*	2.16	5	21.93		32
2	2	14.7	2.95			22.36	18.95	0.01**	0.50			4.25	22

1=BONE (GM); 2=MUSSEL SHELL (GM); 3=OCHRE (#); 4=OCHRE (GM); 5=CHARCOAL (GM); 6=OTHER ORGANICS (GM); 7=CONTACT OBJECTS (GM); 8=OCHRED BONE (GM); 9=OCHRED CORTEX (#); 10=OCHRED CORTEX (GM); 11=BURNT EARTH BURNT STONE (GM); 12=STONE ARTEFACTS (#). *=2 CIGARETTE BUTTS; **=1 CIGARETTE BUTT.